

Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A method of selecting a network directional sensor arrangement for detecting at least one physical phenomenon based on a ~~quality-sensing ability~~ characterization, comprising:

defining a sensing field at each point in the domain of the at least one physical ~~phenomenon~~; phenomenon;

determining well monitored regions and sensor holes in each sensing field;

determining a ~~quality-the sensing ability~~ characterization of the network sensor ~~arrangement for various applications~~; arrangement;

visually displaying the ~~quality-sensing ability~~ characterization; and

selecting at least one sensor network arrangement based on the ~~quality-sensing ability~~ characterization.

2. (Original) The method of claim 1, wherein the sensing field at each sensor node is defined based on an inverse relationship between event location uncertainty and the ability to sense at least one physical phenomenon at that location.

3. (Original) The method of claim 1, wherein the sensing field at each sensor node is defined based on a goodness of fit of statistical assumptions about a physical state of each sensor node.

4. (Currently Amended) A system for selecting a network directional sensor arrangement based on a ~~quality-sensing ability~~ characterization, comprising:

a sensing application, circuit or routine that defines a sensing field at each node of the network sensor arrangement;

a determination application, circuit or routine that determines well monitored regions and sensor holes in the network sensor arrangement;

a characterization application, circuit or routine that determines a quality the sensing ability characterization of the network sensor ~~arrangement for various applications; arrangement;~~

a display device that visually displays the quality-sensing ability characterization; and

a selection application, circuit or routine that selects a network sensor arrangement based on the quality-sensing ability characterization.

5. (Original) The system of claim 4, wherein the sensing application, circuit or routine defines the sensing field at each sensor node based on an inverse relationship between event location uncertainty and the sensing ability of sensor network.

6. (Original) The method of claim 4, wherein the sensing application, circuit or routine defines the sensing field at each sensor node based on a goodness of fit of statistical assumptions about a physical state of each sensor node.

7. (Currently Amended) A method of determining the health of a directional sensor network, comprising:

a sensing mechanism that defines a sensing field at each node of the network sensor arrangement;

a determination mechanism that determines well monitored regions and sensor holes in the network sensor arrangement;

a characterization mechanism that determines a quality-sensing ability characterization of the network sensor ~~arrangement for various applications; arrangement;~~

a display device that visually displays the ~~quality~~sensing ability
characterization; and

a mechanism that selects a network sensor arrangement based on the ~~quality~~
sensing ability characterization.

8. (Original) The method of claim 1, further comprising:
determining blind spots in each sensing field.
9. (Original) The method of claim 2, wherein the event location comprises target
location.
10. (Original) The system of claim 5, wherein the event location comprises target
location.